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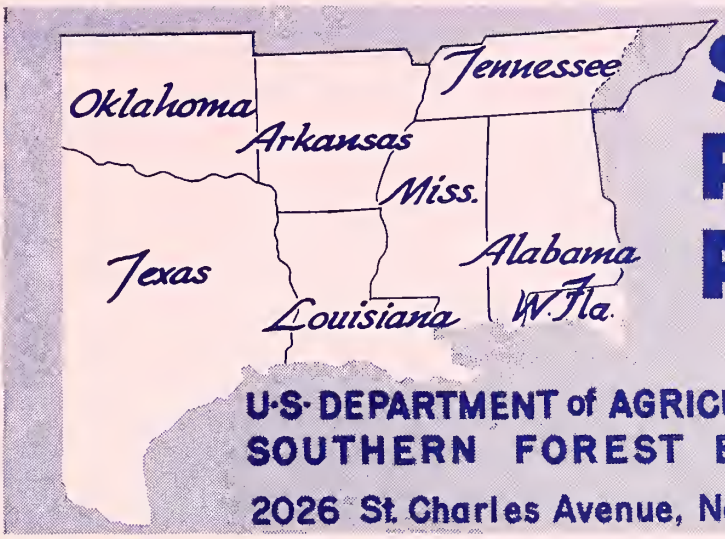

SOUTHERN FOREST PEST REPORTER

U.S. DEPARTMENT of AGRICULTURE, FOREST SERVICE
SOUTHERN FOREST EXPERIMENT STATION
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SUMMARY OF MIDSOUTH PEST CONDITIONS IN 1959

FOREST INSECTS

Bark beetles continued to be the most destructive insect enemies of southern pines, but no major outbreaks occurred in 1959. In east Texas, however, the southern pine beetle population is increasing dangerously in stands flooded by heavy rains. Suppressive measures held the insect in check during the past summer, but now high water is keeping control crews from getting into infested areas. Beetles spreading from uncontrolled centers may soon become an extremely serious problem.

The black turpentine beetle continued to be an important pest in many logging areas and considerable effort was expended to minimize timber losses in residual stands.

Ips beetle infestations in scattered single trees and small groups of trees occurred in most States. The cumulative damage was high.

The Nantucket pine tip moth killed tips and retarded growth in young loblolly and shortleaf pine plantations Southwide. The Texas leaf-cutting ant destroyed newly established seedlings throughout east Texas and west-central Louisiana. Pine sawflies, particularly the red-headed pine sawfly and Neodiprion excitans, were more active than usual, and 17,000 acres of pine severely infested by the latter species required aerial spraying.

In the South, hardwood insects kill far fewer trees than do pine insects, but wood borers that make tunnels in the wood of living hardwoods cause tremendous losses in value. Such losses are more or less constant. By contrast, the less important but more conspicuous damage caused by defoliators varies from year to year. Last spring, extensive hardwood stands in Alabama and Louisiana were defoliated by the forest tent caterpillar. Oakworms were responsible for spectacular late-summer and fall defoliation of oaks in several States.

Southern Pine Beetle

During the early summer, an outbreak of the southern pine beetle again developed rapidly in stands in the Big Thicket of southeast Texas. It appeared over a larger and less accessible area than in 1958. The Texas Forest Service continued leadership in control, which was partially financed by Federal funds provided under the Forest Pest Act. Spot infestations were located from the air and control crews felled beetle trees and treated them with benzene hexachloride in fuel oil.

In the outbreak area, which consists of 70,000 acres in Hardin and Liberty Counties, weekly flights located 135 spot infestations since June. Most spots were small, but several contained about 1,000 beetle trees. Heavy rains in late summer and fall made much of the area inaccessible and over 30 spots remain uncontrolled. Beetles are spreading from these uncontrolled spots to scattered, single trees. From these trees, new infestations may soon develop into a much more serious threat than the present one.

Elsewhere in the Midsouth, the southern pine beetle is static or at a comparatively low ebb. Small outbreaks are beginning to appear and increase in size on industrial lands in east-central Alabama. Some have occurred on the Talladega National Forest also, but here control crews are holding the beetles in check.

Black Turpentine Beetle

The black turpentine beetle has been especially prevalent in stands weakened by heavy logging, flooding, and other disturbances.

During the past year, this beetle was a problem on most of the national forests and many State and private lands in the Gulf States, where it has been most active in flatwoods forests, along creek bottoms, and on low, wet sites. Mechanized logging on poorly drained soils (now especially muddy because of abundant rainfall) has resulted in excessive injury to the roots of remaining trees. This damage, plus prolonged early summer flooding, created ideal conditions for beetle development. Early detection and prompt action prevented excessive timber mortality, but more money was spent in combating this insect than any other forest pest in the Midsouth.

Ips Bark Beetles

Ips beetles kill sapling and larger pines that have been weakened by drought, fire, hail, ice storms, or other causes. They can almost always be found in lightning-struck trees. Infestations are typically dispersed through the forest. Being scattered, the dying trees attract little attention, yet the cumulative mortality is high.

As usual, populations of Ips beetles fluctuated seasonally in most States. No serious outbreaks developed. Groups of pines were killed around lightning-struck trees, and moderate concentrations of single infested trees have been observed in stands weakened by flooding and overdensity. In several areas, Ips avulsus developed in logging slash and spread to nearby standing timber, but generally these spot infestations were localized and not serious.

Pine Sawflies

In September and October 1958, a little-known sawfly, Neodiprion excitans, stripped foliage from loblolly and shortleaf pines on industrial lands in southeast Texas. Severely defoliated stands were well defined from the air, and totaled about 25,000 acres. In early November, the greenish, black-headed larvae spun cocoons on and in the litter near tree bases, and occasionally in bark crevices.

Parasitic insects, mostly small wasps, became unusually active during the winter of 1958-59 and killed many immature sawflies in the cocoons. Hogs, armadillos, mice, and shrews destroyed many more, and by early March an estimated 95 percent of the sawfly population in the badly defoliated areas had been wiped out. The few sawflies that survived transformed to adults and produced a small spring brood that failed to cause noticeable defoliation. The existing sawfly population was very small and further damage was considered unlikely in 1959. Abundant new needle growth on most of the trees defoliated the previous fall pointed to a good recovery.

During the late spring and early summer, however, one or more additional broods developed and populations built up rapidly. By July, previously defoliated stands were again threatened and occasional dying trees were found to harbor the southern pine beetle. Aerial spraying with DDT was recommended to prevent tree mortality and further growth loss and to discourage a possible increase of the southern pine beetle in the weakened stands. Approximately 17,000 acres of the more heavily infested timber were sprayed in late July and early August, the project being partially financed by Federal funds provided under the Forest Pest Act. A larval disease, as yet undetermined, spread rapidly through the treated and untreated areas when the project was near completion. The chemical and the disease, together with the continued activity of parasites within surviving cocoons, apparently reduced the sawfly to an endemic level. In early November 1959, an aerial survey was made over 225,000 acres to map possible areas of complete defoliation as a basis for considering control action, but no such areas were found.

The red-headed pine sawfly, N. lecontei, continued prevalent on young pines of all species in Louisiana and Texas, and isolated occurrences were reported from Oklahoma, Arkansas, Alabama, and Mississippi. In some plantations repeated defoliations caused pines to die, and spraying was necessary to prevent further damage in several instances. A severe outbreak on 500 acres of loblolly and longleaf pines on the Kisatchie National Forest, Louisiana, for example, required aerial and ground spraying with DDT in June. The insecticide, together with heavy egg parasitism by a Chalcid wasp (Closterocerus cinctipennis), appeared to have controlled the insects, but a second spraying was necessary on part of the area in July. Overlapping broods and rapid reproduction apparently caused the unexpected buildup.

Nantucket Pine Tip Moth

The Nantucket pine tip moth is the commonest and most widespread insect attacking young loblolly and shortleaf pine plantations in the South and Southeast. It is becoming more important with the expanding planting program. Severe infestations not only reduce height growth in young trees, but stimulate excessive branching that results in forked or crooked stems.

Texas Leaf-cutting Ant

The Texas leaf-cutting ant or town ant chronically causes considerable mortality by stripping needles, buds, and bark from naturally established and planted pine seedlings in west-central Louisiana and east Texas. In attempting to increase the productivity of natural stands and in planting new areas to pine seedlings, landowners are faced with the possibility of severe losses unless colonies in the vicinity are first fumigated with methyl bromide.

Oakworms

Moderate to complete defoliation of various species of oak were reported in many areas during September and October. The orange-striped oak worm, yellow-necked oak worm, and variable oak-leaf caterpillar, among other species, fed on thousands of acres of oaks in Jasper and Newton Counties, Texas, and in areas of southwestern Louisiana and northeastern Mississippi. Unless they have been otherwise weakened, oaks can endure considerable defoliation, particularly in the autumn. Oak worms, therefore, are not considered to be serious pests of forest trees.

Your Cooperation Needed!

With this issue of the REPORTER we are including a Forest Insect Field Report card which we hope you will use. We would very much appreciate receiving reports on any forest insect activity, large or small, that you

encounter. We are particularly interested in the occurrence of the southern pine beetle, and infestations of other bark beetles and defoliators such as sawflies. The pine tip moth and black turpentine beetle are so common that they are often taken for granted, but we would like to receive reports regarding these also. When additional cards are needed, please so indicate on your report when you send it in.

FOREST DISEASES

While forest diseases are seldom spectacular in the Midsouth, they nevertheless cause heavy damage. Protection against them must be included in any successful forest management plan. In particular, continuous protection is needed against four diseases: (1) Satisfactory regeneration of longleaf pine over wide areas cannot be attained without brown-spot control by prescribed burning or fungicidal spraying. (2) Heart rot is the greatest source of loss in hardwoods. This loss can be reduced only by minimizing basal wounds--i.e., by preventing fires and by logging carefully. (3) Fusiform rust decimates many plantations in the lower Gulf States. In heavy rust areas losses can be lessened by encouraging the more resistant longleaf, or by planting other species at closer spacing and pruning off branches when they develop galls less than 15 inches from the stem. (4) In the nursery, diseases are regularly controlled by spraying, but soil fumigation also will often be worth while.

Forest owners should also be on the lookout for oak wilt and, in pine plantations, for annosus root rot. When seed-production areas are being located or established, the cone-rust hazard should be evaluated.

Nursery Diseases

Losses from fusiform rust were generally lower in 1959 than in most previous years--chiefly because most nurseries followed spray schedules more closely. A few nurseries again sustained losses of 10 to 15 percent, mainly because spraying was not started when germination began. The need for careful and intensive spray programs cannot be overemphasized.

Most nurseries have eliminated their root-rot problems by soil fumigation, but serious losses occurred in one Alabama nursery.

One Mississippi nursery culled 20 percent of its slash because of brown spot. Ordinarily, slash is not seriously attacked and the predisposing factor in the current outbreak has not been determined.

Cone Rust

The exact limits of the region of high cone rust hazard have not been determined, but they appear to be coextensive with important concentrations of live oaks, the alternate host. In parts of south Mississippi the loss of cones on slash pine was again 70 percent. Plans are made for a cone rust survey this spring. Anyone interested in establishing slash pine seed-producing areas should first determine the cone rust hazard of proposed sites: seed-production areas should be located only outside the cone rust zone.

Oak Wilt

Two oak-wilted trees were identified in Adair County, Oklahoma, last June. This is the first wilt found in Oklahoma. The trees were only a few miles west of the Arkansas infection area and therefore the known range of wilt was not greatly extended. In most of the Arkansas infection area the wilted trees are widely scattered, but a second intensification was found in Logan County. This and the one in Sharp County are the only areas in Arkansas where appreciable wilt is known. Even though no appreciable damage has yet occurred in the State since the disease was found there in 1950, oak wilt is fast-acting and lethal. Owners of oak stands in the Midsouth are advised to watch for, and report, any sudden wilting of oaks so that prompt diagnosis can be made and control measures started if needed.

Oak Root Rot

Scattered dying of sapling and pole-sized white oak has occurred for at least two years in northwest Arkansas. The symptoms are typical for a root rot fungus spreading from tree to tree through the soil. A fungus has been isolated from dying oaks but has not been identified or tested for pathogenicity. No serious losses have yet been obvious from this new disease.

Root Rot of Pine Plantations

Root rot caused by Fomes annosus has caused serious losses in a slash pine planting in northwest Louisiana and a loblolly planting in south Mississippi. In addition, it was found in other slash and loblolly plantations in Texas and Louisiana. In each case, the stand had been thinned a few years previously, and the trees dying of rot were adjacent to stumps. Surveys so far are limited, but indications are that root rot may be present in about 20 percent of thinned plantations. Foresters should be on the lookout for dying trees two to four years after a plantation is thinned. If root rot is present, recently dead trees will have dead, pitch-infiltrated roots, and often fruiting bodies in the duff

around the base. These fruiting bodies are brown on top and whitish below; their shape is irregular. No controls are recommended at this time. More information is needed on the frequency of attack and importance of the losses.

Sweetgum Lesion

This is a non-killing disease of sweetgum which causes irregularities in the lower stems, decreasing the value of the butt logs for lumber and veneer. The disease is found in the lower reaches of the rivers flowing into the Gulf of Mexico--that is, in Texas, Louisiana, Mississippi, Alabama, and Florida. It probably also occurs along the Atlantic Coast. The amount of loss from lesion has not been determined but the disease is prevalent in some stands. No control is known.

Sweetgum Blight

Midsouth sweetgum stands that had considerable dieback three years ago continue to show marked reduction in mortality and cessation of dieback in the crowns. All the indications are that sweetgum blight, as well as the diebacks of many other hardwood species, will be unimportant unless long periods of rainfall deficiencies again develop.

NEW PUBLICATIONS

Copies of the following publications are available on request to the Southern Forest Experiment Station, 704 Lowich Building, 2026 St. Charles Avenue, New Orleans 13, La.

Bennett, Wm. H., and Ostmark, H. Eugene. The Truth About Tessie Terebrans. Southern Forest Experiment Station Occasional Paper 174. 1959.

Bennett, Wm. H. What's the Pitch With the Black Turpentine Beetle? Southern Lumberman, Jan. 1, 1960, pp. 35, 36.

Orr. L. W. Protecting Forest Products from Insects. Jour. Forestry, Sept. 1959, pp. 639, 640.

St. George, R. A., Johnston, H. R., and Kowal, R. J. Subterranean Termites, Their Prevention and Control in Buildings. U. S. Dept. of Agriculture Home & Garden Bul. No. 64. 1960.

Toole, E. R. Butt Rot of Southern Hardwoods. U. S. Dept. of Agriculture Forest Pest Leaflet 43. 1960.